

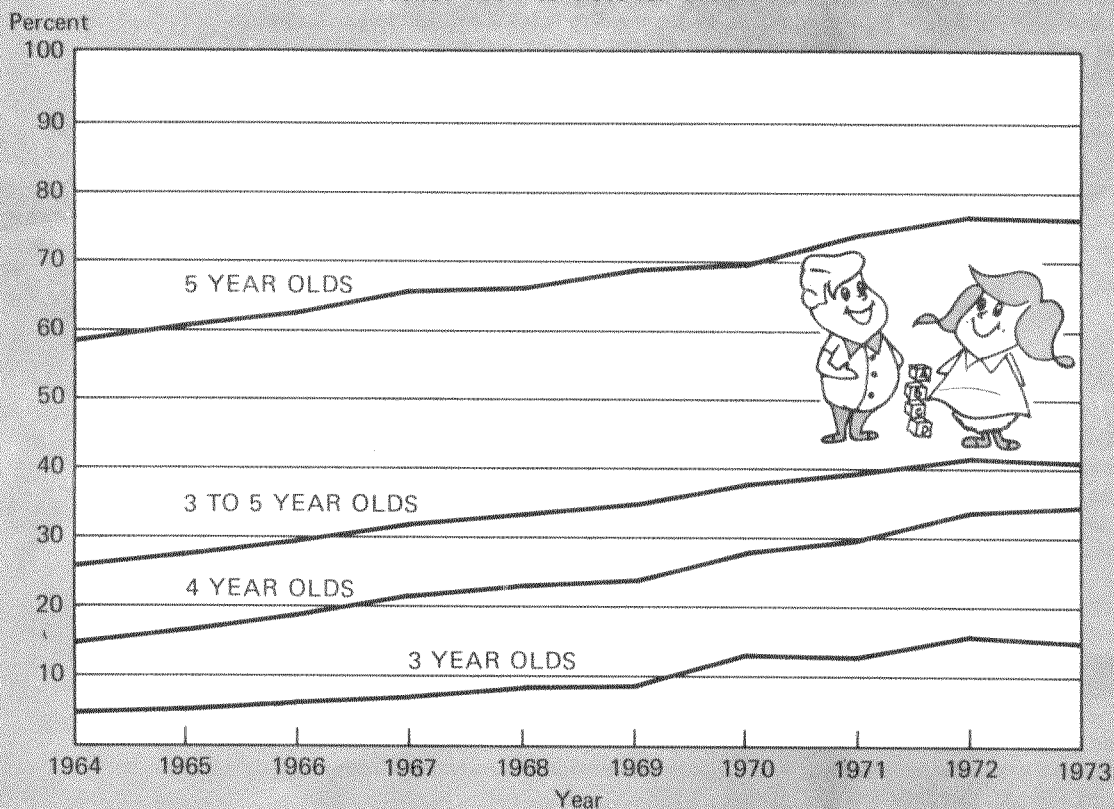
CURRENT POPULATION REPORTS

Population Characteristics

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NURSERY SCHOOL AND KINDERGARTEN ENROLLMENT: OCTOBER 1973

Percent of 3 to 5 year old children enrolled in nursery school and kindergarten:
October 1964 to October 1973



U. S. DEPARTMENT OF COMMERCE
Social and Economic Statistics Administration
BUREAU OF THE CENSUS



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NURSERY SCHOOL AND KINDERGARTEN ENROLLMENT: OCTOBER 1973

INTRODUCTION

The data in this report are based on the Census Bureau's October 1973 Current Population Survey, and present information on the age, race, type of school, control of school, type of residence, and family income of children enrolled in nursery school and kindergarten.

The tables contained in the report for 1973 are comparable to those published by the Office of Education for prior years.¹ Also included here are selected summary tables for the period from 1964 to 1973.

Some highlights of the data presented in this report are:

- The number of 3- to 5-year-old children enrolled in preprimary programs (nursery school and kindergarten) was 4.2 million in 1973, representing about two of every five children in that age group.

- Although the enrollment rate for these children increased from 26 percent to 37 percent between 1964 and 1970, there was no significant change in the enrollment rate between 1972 and 1973.

- Nursery school enrollment has more than doubled during the past decade, from about one-half million in 1964 to 1.3 million in 1973.

- In 1973, about three of every four of the 5-year-old children were enrolled in a preprimary program, compared with about one of three of the 4-year-olds and one of seven of the 3-year-old children.

- Nursery school enrollment continues to be concentrated largely in private programs (70 percent) whereas kindergarten students are predominantly in public programs (84 percent).

- The majority of Negro nursery school students were in public programs (69 percent), but the majority of white nursery school students attended private programs (78 percent).

Trends in preprimary enrollment since 1964
During the 1960's the number of 3- to 5-year old children enrolled in preprimary programs (nursery school and kindergarten) increased while the total population of this age group was decreasing due to the declining number of births (table A). Because of this phenomenon, the enrollment rate between 1964 and 1970 jumped from 26 percent to 37 percent. However, neither the enrollment rate for children 3 to 5 years old nor the number enrolled in preprimary grades changed significantly between 1972 and 1973. In 1973, the number of 3- to 5-year old children enrolled was 4.2 million, representing about two of every five children in that age group.²

Table A. Number of 3- to 5-Year Old Children Enrolled in Nursery School and Kindergarten October 1964 to October 1973

(Numbers in thousands)

Year	Total children 3 to 5 years old	Enrolled in nursery school and kindergarten	
		Number	Percent
1973.....	10,344	4,234	40.9
1972.....	10,166	4,231	41.6
1971.....	10,610	4,148	39.1
1970.....	10,949	4,104	37.5
1969.....	11,424	3,949	34.6
1968.....	11,905	3,928	33.0
1967.....	12,242	3,868	31.6
1966.....	12,486	3,674	29.4
1965.....	12,549	3,407	27.1
1964.....	12,496	3,187	25.5

²The total number of 3- to 5-year old children increased slightly in 1973 over the 1972 figure, even though this age group had been decreasing in size annually since 1966. The increase is due largely to the greater number of children born in 1970 than in 1967. According to presently available data on number of births, the number of 3- to 5-year olds in 1974 should be about the same as the 10.3 million in 1973, and then decline again in subsequent years. See the Current Population Report, Series P-25, No. 499, "Estimates of the Population of the United States and Components of Change: 1972."

¹Last published as DHEW Publication No. (OE) 73-11411, "Preprimary Enrollment: October 1972" by the National Center for Educational Statistics, Office of Education.

Since there are more free public school programs for 5-year old children than for the younger children, it is not surprising that the enrollment rate for the 5-year old children far surpasses that for the children who are 3 and 4 years old (table B). In 1973, about three out of every four of the 5-year old children were enrolled in preprimary programs, compared with about one of three of the 4-year old children and one of seven of those who were 3 years old.³ Negro children 3 and 4 years old had a somewhat higher preprimary enrollment rate than white children (29 percent compared with 23 percent).

Table B. Percent of 3- to 5-Year Old Children Enrolled in Nursery School and Kindergarten: October 1964 to October 1973

Year	Percent enrolled		
	3 year olds	4 year olds	5 year olds ¹
1973.....	14.5	34.2	76.0
1972.....	15.5	33.6	76.1
1971.....	12.4	29.8	73.7
1970.....	12.9	27.8	69.3
1969.....	8.7	23.1	68.9
1968.....	8.3	22.8	66.0
1967.....	6.8	21.3	65.4
1966.....	6.0	18.9	62.2
1965.....	4.9	16.1	60.6
1964.....	4.3	14.9	58.1

¹Excludes 5-year old children enrolled above kindergarten.

While the number of 3- to 5-year old children in kindergarten has shown little change during the past decade, the number in nursery school has more than doubled, from about one-half million children in 1964 to 1.3 million in 1973 (table C). In 1964, one out of every seven children enrolled in preprimary programs was enrolled in nursery school; by 1973 this proportion had increased to nearly one out of three (table D).

The proportion of kindergarten students who were enrolled in public schools has remained unchanged at close to four-fifths during the past 10 years, while the proportion of nursery school students enrolled in public programs increased from about one-fifth to three-tenths by 1966, and then remained at about that level (table E).

³Including elementary school, the enrollment rate for 5-year olds in 1973 would actually be about 86 percent. One out of ten of the 5-year olds was enrolled in first grade in 1973.

Table C. Number of 3- to 5-Year Old Children Enrolled in Nursery School and Kindergarten by Type of School: October 1964 to October 1973

(Numbers in thousands)

Year	Nursery school	Kindergarten	Percent change over preceding year	
			Nursery school	Kindergarten
1973.....	1,318	2,916	3.2	-1.3
1972.....	1,277	2,954	20.2	-4.3
1971.....	1,062	3,086	-2.9	2.5
1970.....	1,094	3,010	27.7	-2.7
1969.....	857	3,092	5.0	-0.6
1968.....	816	3,112	14.6	-1.4
1967.....	712	3,157	3.8	5.7
1966.....	686	2,988	31.9	3.5
1965.....	520	2,887	10.4	6.3
1964.....	471	2,716	(X)	(X)

X Not applicable.

Table D. Percent Distribution of Nursery School and Kindergarten Enrollment of 3-to 5-Year Old Children by Type of Program: October 1964 to October 1973

Year	Total enrolled	Nursery school	Kindergarten
1973.....	100.0	31.1	68.9
1972.....	100.0	30.2	69.8
1971.....	100.0	25.6	74.4
1970.....	100.0	26.7	73.3
1969.....	100.0	21.7	78.3
1968.....	100.0	20.8	79.2
1967.....	100.0	18.4	81.6
1966.....	100.0	18.7	81.3
1965.....	100.0	15.3	84.7
1964.....	100.0	14.8	85.2

Negroes represented a larger proportion of the public than private enrollment at both the nursery school and kindergarten levels in 1973 (table F). About 37 percent of the students in public nursery school were Negroes, compared with only 7 percent of the students in private nursery school. About 16 percent of the public kindergarten enrollees in 1973 were black, but only 7 percent of the private kindergarten enrollees. The majority of Negro nursery school students were in public programs (69 percent), but the majority of white nursery school students attended private programs (78 percent). The relatively high proportion of Negroes in public programs is to some extent attributable to the Head Start program, in which Negroes are the single largest racial group.

Table E. Percent of 3- to 5-Year Old Children Enrolled in Public and Private Nursery School and Kindergarten: October 1964 to October 1973

Year	Total enrolled		Nursery school		Kindergarten	
	Public	Private	Public	Private	Public	Private
1973.....	66.8	33.2	29.9	70.1	83.5	16.5
1972.....	67.9	32.1	31.0	69.0	83.8	16.2
1971.....	68.6	31.4	29.7	70.3	82.0	18.0
1970.....	69.0	31.0	30.3	69.6	83.0	17.0
1969.....	70.0	30.0	28.2	71.8	81.6	18.4
1968.....	72.0	28.0	32.1	67.9	82.6	17.5
1967.....	71.7	28.3	32.2	68.0	80.6	19.4
1966.....	71.5	28.5	31.0	69.0	80.8	19.2
1965.....	71.0	29.0	24.4	75.6	79.4	20.6
1964.....	73.6	26.4	19.3	80.7	83.0	17.0

Table F. Negroes as Percent of Total 3- to 5-Year Old Enrollment in Nursery School and Kindergarten by Control and Type of School: October 1964 to October 1973

Year	Total enrolled		Nursery school		Kindergarten	
	Public	Private	Public	Private	Public	Private
1973.....	18.5	6.8	36.5	6.9	15.5	6.7
1972.....	17.5	8.6	28.5	8.2	15.7	9.4
1971.....	17.2	7.9	28.3	8.2	15.8	7.6
1970.....	17.2	7.7	38.9	6.4	14.4	9.6
1969.....	16.2	10.7	42.1	11.1	13.7	10.4
1968 ¹	18.1	9.8	37.8	9.6	16.0	10.1
1967 ¹	18.1	9.0	41.5	11.2	16.0	7.4
1966 ¹	16.8	8.8	41.3	7.8	14.6	9.6
1965 ¹	15.1	8.8	29.1	8.9	14.3	8.7
1964 ¹	14.6	11.5	38.5	8.9	13.7	13.6

¹Negro and other races. Data for Negroes separately not available prior to 1969.

The proportion of nursery school students attending full-day (about 29 percent) has not changed significantly between 1969 and 1973; however, the proportion of kindergarten students attending full-day has approximately doubled in that five year period, from about 11 percent to 20 percent (table G). A much larger proportion of Negro (45 percent) than white (18 percent) children attended preprimary programs full-day in 1973. This is likely due to the higher labor force participation rates for Negro women with young children compared to white women. Many nursery schools and some kindergartens offer both full-day and part-day programs. Since a higher proportion of the Negro women work, a larger fraction of these mothers are likely to choose full-day attendance for their children than do white mothers.

Family income of preprimary students. There were substantial differences in the income dis-

tribution of families sending children to nursery school and kindergarten according to whether the program was public or private (table H). For example, three-fourths of children in private nursery schools in 1973 were in families with incomes over \$10,000 during the preceding 12 months, whereas only about one-third of the children in public nursery schools were from families with comparable incomes.⁴ Among kindergarten students, 62 percent of private compared with 47 percent of public program pupils had family incomes of \$10,000 or more.

⁴Family income data obtained from one question in the October Current Population Survey underestimates the family income when compared with the data collected in the March Current Population Survey where several income questions are included. See the section on Definitions and Explanations.

Table G. Number of 3- to 5-Year Old Children Enrolled in Nursery School and Kindergarten by Whether Enrolled Full or Part-Day and Type of Program: October 1969 to October 1973

(Number in thousands)

Year	Total enrolled		Nursery school		Kindergarten	
	Full day	Part day	Full day	Part day	Full day	Part day
NUMBER						
1973.....	958	3,276	385	933	573	2,342
1972.....	922	3,309	404	873	518	2,436
1971.....	720	3,428	294	768	426	2,660
1970.....	698	3,406	291	803	407	2,603
1969.....	587	3,363	256	601	331	2,761
PERCENT DISTRIBUTION BY TYPE OF PROGRAM						
1973.....	22.6	77.4	29.2	70.8	19.7	80.3
1972.....	21.8	78.2	31.6	68.4	17.5	82.5
1971.....	17.4	82.6	27.7	72.3	13.8	86.2
1970.....	17.0	83.0	26.6	73.4	13.5	86.5
1969.....	14.9	85.2	29.9	70.1	10.7	89.3

Table H. Percent Distribution of Household Income for Nursery School and Kindergarten Pupils 3- to 5-Years Old by Control of School: October 1973

Household income of preprimary students	Nursery school		Kindergarten	
	Public	Private	Public	Private
Total.....	100.0	100.0	100.0	100.0
Under \$3,000.....	13.5	1.5	5.6	1.9
\$3,000 to \$4,999.	16.5	3.2	10.9	3.8
\$5,000 to \$7,499.	17.9	6.3	15.0	10.4
\$7,500 to \$9,999.	9.7	8.4	15.0	14.1
\$10,000 or more..	36.2	75.6	47.0	62.4
Income not reported.....	6.3	5.0	6.4	7.4

Three- to five-year old Negro children as a group had higher enrollment rates than whites at the lower end of the income distribution. This was also true for the 3- and 4-year old children separately, but not for the five-year olds. For example, 24 percent of the 3-year old Negro children whose family income was under \$3,000 were enrolled in 1973, compared with only 10 percent of similar white children.

Educational attainment of household head. There was a tendency in 1973 for enrollment rates of the 3- to 5-year old children to increase as the educational attainment of the head of their household increased (table 4).

Although the increase was not necessarily statistically significant between each attainment level, there was a large difference between the rates for children whose household head had completed only high school, and those who had completed four or more years of college. Among 3-year old children, for instance, only 10 percent of those whose family head had only completed high school were enrolled in nursery school or kindergarten as compared with 32 percent of those whose head had completed college. A large difference can also be observed for the 4-year old children.

One out of every four white children attending preprimary programs came from families in which the head was a college graduate, and an additional 17 percent came from household's in which the head had completed one to three years of college. About 7 percent of the Negro children attending preprimary programs were in households in which the head was a college graduate, and an additional 7 percent were in households where the head had completed one to three years of college.

Type of residence and region. Preprimary programs, especially nursery schools, are heavily concentrated in the Nation's metropolitan areas. Thus, 79 percent of the nursery school pupils in 1973 and 71 percent of the kindergarten pupils lived within the country's 243 standard metropolitan statistical areas (SMSA's) recognized at the time of the 1970

census (table I). Private nursery school enrollment was even more centered in metropolitan areas than public enrollment (83 percent compared with 72 percent).

About 44 percent of 3- to 5-year old children living in central cities of metropolitan areas and in the metropolitan areas surrounding central cities were enrolled in nursery school or kindergarten in 1973, compared with 34 percent of the children of similar age living in non-metropolitan areas. About 54 percent of the private nursery school enrollment in the country

was in the metropolitan area surrounding central cities whereas the largest portion of public nursery school enrollment (41 percent) was in the Nation's central cities. Partially as a consequence of having relatively few public kindergarten programs, the South had a lower preprimary enrollment rate for 5-year olds than any of the other regions. However, the enrollment rate for 4-year old children in the South was not significantly different from that for the other regions, and 3-year old children in the South had a higher enrollment rate than their peers in the North Central region.

Table I. Percent Distribution by Type of Residence of 3- to 5-Year Old Children Enrolled in Nursery School and Kindergarten by Control of School: October 1973

Type of residence	Nursery school			Kindergarten		
	Total	Public	Private	Total	Public	Private
Total.....	100.0	100.0	100.0	100.0	100.0	100.0
Metropolitan.....	79.3	71.7	82.6	71.0	70.2	74.2
Central cities...	32.5	40.7	29.0	31.9	31.9	31.5
Outside central cities.....	46.8	31.0	53.6	39.1	38.3	42.7
Nonmetropolitan....	20.6	28.3	17.4	29.1	29.7	25.8

RELATED REPORTS

Beginning in 1964 and ending in 1972, the Office of Education has published an annual report on the number of 3- to 5-year old children enrolled in preprimary programs (i.e., nursery school and kindergarten) based on the Census Bureau's October Current Population Survey. These reports contain data essentially comparable to those presented in this report. The OE series was last published as DHEW Publication No. (OE) 73-11411, "Preprimary Enrollment: October 1972," by the National Center for Educational Statistics.

Advanced data on school enrollment for persons 3 to 34 years of age for October 1973 were presented in the Census Bureau's Current Population Reports, Series P-20, No. 261. Statistics on school enrollment for October of the years prior to 1973 have been published in other Current Population Reports in Series P-20.

1960 and 1970 census data. Statistics on school enrollment for cities, standard metropolitan statistical areas, States, regions and the United States appear in reports of the decennial censuses. Detailed statistics on school enrollment by age and socioeconomic characteristics for regions and the United States are

presented in Subject Reports of the 1970 census, especially in PC(2)-5A, School Enrollment.

Figures on school enrollment from the October Current Population Surveys differ from decennial census data for reasons in addition to the difference in the dates. In the first place, the survey data exclude the institutional population and members of the Armed Forces. These two groups were included in the census. Second, there were differences in field work. The small group of Current Population Survey enumerators were more experienced and had more intensive training and supervision than the large number of temporary Census enumerators and may have more often obtained more accurate answers from respondents. Third, the census was taken in April and relates to enrollment since February 1, whereas the surveys were taken in October and relate to enrollment in the current term. This difference in months of the year affects not only the extent of school enrollment (through "dropouts" during the school year, etc.) but also the level of school in which persons of a given age are enrolled.

Data from school systems. Information on school enrollment and educational attainment is also collected and published by Federal, State, and local governmental agencies, and by independent research organizations. This information is generally obtained from reports

of school systems and institutions of higher learning, and from other surveys and censuses. These data are only roughly comparable with data collected by the Bureau of the Census by household interviews, however, because of differences in definitions, subject matter covered, and enumeration methods.

DEFINITIONS AND EXPLANATIONS

Population coverage. The figures shown are for the civilian population excluding the relatively small number of inmates of institutions.

Metropolitan-nonmetropolitan residence. The population residing in standard metropolitan statistical areas (SMSA's) constitutes the metropolitan population. Except in New England, an SMSA is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county, or counties, containing such a city or cities, contiguous counties are included in an SMSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, SMSA's consists of towns and cities, rather than counties. The metropolitan population in this report is based on SMSA's as defined in the 1970 census and does not include any subsequent additions or changes.

The population inside SMSA's is further classified as "in central cities" and "outside central cities." With a few exceptions, central cities are determined according to the following criteria:

1. The largest city in an SMSA is always a central city.
2. One or two additional cities may be secondary central cities on the basis and in the order of the following criteria:
 - a. The additional city or cities have at least 250,000 inhabitants.
 - b. The additional city or cities have a population of one-third or more of that of the largest city and a minimum population of 25,000.

Geographic regions. The four major regions of the United States, for which data are presented in this report, represent groups of States, as follows:

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

North Central: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Mississippi, Maryland, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

West: Alaska, Arizona, Colorado, California, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Preprimary enrollment. The school enrollment statistics from the Current Population Surveys are based on replies to the enumerator's inquiry as to whether the person was enrolled in school. Preprimary enrollment is the sum of enrollment in regular kindergarten and nursery school.

A nursery school is defined as a group or class that is organized to provide educational experiences for children during the year or years preceding kindergarten. It includes instruction as an important and integral phase of its program of child care. Private homes in which essentially custodial care is provided are not considered nursery schools. Children attending nursery school or kindergarten are classified as attending during either part of the day or the full day. Part-day attendance refers to those who attend either in the morning or in the afternoon, but not both. Full-day attendance refers to those who attend both in the morning and afternoon.

"Head Start." Children enrolled in "Head Start" programs or similar programs sponsored by local agencies to provide preschool education to young children are counted under "Nursery" or "Kindergarten" as appropriate.

Public or private school. In this report, a public school is defined as any educational institution operated by publicly elected or appointed school officials and supported by public funds. Private schools included educational institutions established and operated by religious bodies, as well as those which are under other private control. In cases where enrollment was in a school program which was both publicly and privately controlled or supported, enrollment was counted according to whether it was primarily public or private.

Age. The age classification is based on the age of the person at his last birthday.

Race. The population is divided into three groups on the basis of race: white, Negro, and "other races." The last category includes Indians, Japanese, Chinese, and any other race except white and Negro.

Years of school completed. Data on years of school completed of the household head in this report were derived from the combination of answers to two questions: (a) "What is the highest grade of school ...has ever attended?" and (b) "Did ...finish this grade?"

The questions on educational attainment apply only to progress in "regular" schools. Such schools include graded public, private, and parochial elementary and high schools (both junior and senior high), colleges, universities, and professional schools, whether day schools or night schools. Thus, regular schooling is that which may advance a person toward an elementary school certificate or a high school diploma, or a college, university, or professional school degree. Schooling in other than regular schools was counted only if the credits obtained were regarded as transferable to a school in the regular school system.

Head of household. One of the persons residing together as a household was designated as the head. The head of a household is usually the person regarded as the head by members of the household. Women are not classified as heads if their husbands are resident members of the household at the time of the survey.

Family income. Income as defined in this report represents the combined total money income of the family before deductions for personal taxes, Social Security, bonds, etc. It is the algebraic sum of money wages and salaries, net income from self-employment, and income other than earnings received by all family members during the 12 months prior to the surveys. It should be noted that, although the family income statistics refer to receipts during the previous 12 months, the characteristics of the person, such as age, marital status, etc., and the composition of families refer to the date of the survey.

The income tables include in the lowest income group (under \$3,000) those who were classified as having no income in the previous 12 months and those reporting a loss in net income from farm and nonfarm self-employment or in rental income.

The income tables in this report include a separate category for families for whom no income in information was obtained. In most of the other Current Population Survey Reports showing income data, the missing income data have been allocated.

The money income level of families shown in this report may be somewhat understated. Income data from the October control card are based on the respondent's estimate of total family money income for the preceding 12 months coded in broad, fixed income intervals (table J). Income data collected in the March supplement to the Current Population Survey are based on responses to 8 direct questions asked of all persons 14 years old and over identifying 14 different sources of income and cover the preceding calendar year.

Table J. Income Intervals on the Control Card Used in the October Current Population Survey

Under \$1,000	\$6,000 to \$7,499
\$1,000 to \$1,999	\$7,500 to \$9,999
\$2,000 to \$2,999	\$10,000 to \$14,999
\$3,000 to \$3,999	\$15,000 to \$24,999
\$4,000 to \$5,999	\$25,000 and over

Previous research has shown that the use of broad income intervals to record money income tends to reduce the rate of nonreporting while increasing the likelihood that the amounts reported will be significantly understated as compared with results from more detailed questions (table K).

Table K. October CPS Control Card Family Income and March CPS Supplement Family Income for 1967 Through 1972

Year	Median family income, October control card	Percent change	Median family income, March supplement	Percent change	October-March ratio
1967.....	\$6,811	(X)	\$7,974	(X)	0.85
1968.....	7,189	5.5	8,632	8.3	0.83
1969.....	7,770	8.1	9,433	9.3	0.82
1970.....	8,268	6.4	9,867	4.6	0.84
1971.....	8,680	5.0	10,285	4.2	0.84
1972.....	9,275	6.9	11,116	8.1	0.83
1973.....	10,155	9.5	12,051	8.4	0.84

X Not applicable.

Occupation of household head. The data refer to the civilian job held during the survey week. Persons employed at two or more jobs were reported in the job at which they worked the greatest number of hours during the week. The term "white collar" refers to the combination of the following major groups used in the 1970 Census of Population: (a) professional, technical and kindred; (b) managers and administrators, except farm; (c) clerical and kindred workers and (d) sales workers. The term "farm workers" includes the major occupation groups (a) farmers and farm managers and (b) farm laborers and foremen. The term "manual service" refers to the sum of the following major occupation groups: (a) craftsmen and kindred workers; (b) operatives including transport; (c) service workers, including private household and (d) laborers, excluding farm.

The category "no household head" refers to a child in a household whose head was residing away from home as a member of the Armed Forces.

Rounding of estimates. Individual figures are rounded to the nearest thousand without being adjusted to group totals, which are independently rounded. Percentages are based on the unrounded absolute numbers.

SOURCE AND RELIABILITY OF THE ESTIMATES

Source of data. The estimates are based on data obtained in October 1973 in the Current Population Survey of the Bureau of the Census. The sample is spread over 461 areas comprising 923 counties and independent cities with coverage in each of the 50 States and the District of Columbia. Approximately 47,000 occupied households are eligible for interview each month. Of this number 2,000 occupied units, on the average, are visited but interviews are not obtained because the occupants are not found at home after repeated calls or are unavailable for some other reason. In addition to the 47,000, there are also about 8,000 sample units in an average month which are visited but are found to be vacant or otherwise not to be interviewed.

The estimating procedure used in this survey involved the inflation of the weighted sample results to independent estimates of the civilian noninstitutional population of the United States by age, race, and sex. These independent estimates were based on statistics from the 1970 Census of Population; statistics of births, deaths, immigration and emigration; and statistics on the strength of the Armed Forces.

Reliability of the estimates. Since the estimates are based on a sample, they may differ somewhat from the figures that would have

been obtained if a complete census had been taken using the same schedules, instructions and enumerators. As in any survey work, the results are subject to errors of response and of reporting, as well as being subject to sampling variability.

The standard error is primarily a measure of sampling variability, that is, of the variations that occur by chance because a sample rather than the whole of the population is surveyed. As calculated for this report, the standard error also partially measures the effect of response and enumeration errors, but it does not measure, as such, any systematic biases in the data. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census figure by less than the standard error. The chances are about 90 out of 100 that this difference would be less than 1.6 times the standard error, and the chances are about 95 out of 100 that the difference would be less than twice the standard error.

All statements of comparison appearing in the text are significant at a 1.6 standard error level or better, and most are significant at a level of more than 2.0 standard errors. This means that for most differences cited in the text, the estimated difference is greater than twice the standard error of the difference. Statements of comparison qualified in some way (e.g., by use of the phrase, "some evidence") have a level of significance between 1.6 and 2.0 standard errors.

The figures presented in tables L and M are approximations to the standard errors of various estimates shown in this report. In order to derive standard errors that would be applicable to a wide variety of items and could be prepared at a moderate cost, a number of approximations were required. As a result, the tables of standard errors provide an indication of the order of magnitude of the standard errors rather than the precise standard error for any specific item. Table L contains the standard errors of estimated numbers of children enrolled in nursery school and kindergarten.

The reliability of an estimated percentage, computed by using sample data for both numerator and denominator, depends upon both the size of the percentage and the size of the total upon which the percentage is based. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are 50 percent or more. Table M contains the standard errors of estimated percentages.

Note when using small estimates. Percentage distributions are shown in this report only when the base of the percentage is greater

than 75,000. Because of the large standard errors involved, there is little chance that percentages would reveal useful information when computed on a smaller base. Estimated totals are shown, however, even though the relative standard errors of these totals are larger than those for the corresponding percentages. These smaller estimates are provided primarily to permit such combinations of the categories as serve each user's needs.

Table L. Standard Errors of Estimated Numbers

(68 chances out of 100)

Size of estimate	Standard error	Size of estimate	Standard error
25,000.....	7,000	1,000,000..	40,000
50,000.....	9,000	1,500,000..	49,000
100,000.....	13,000	2,500,000..	60,000
250,000.....	21,000	5,000,000..	77,000
500,000.....	29,000	7,500,000..	83,000
750,000.....	35,000		

Illustration of the use of tables of standard errors. Table 1 of this report shows that 2,829,000 3 to 5 year old children were enrolled in public preprimary school programs in October 1973. Table L shows the standard error on an estimate of this size to be approximately 62,000. The chances are 68 out of 100 that the estimate would have been a figure differing from a complete census figure by less than 62,000. The chances are 95 out of 100 that the estimate would have differed from a complete census figure by less than 124,000.

Of these 2,829,000 children, 394,000 or 13.9 percent were enrolled in nursery school. Table M shows the standard error of 13.9 percent on a base of 2,829,000 to be approximately .9 percent. Consequently, chances are 68 out of 100 that the estimated 13.9 percent would be within .9 percentage points of a complete census figure, and chances are 95 out of 100 that the estimate would be within 1.8 percentage points of a census figure; i.e., this 95 percent

confidence interval would be from 12.1 to 15.7 percent.

Differences. For a difference between two sample estimates, the standard error is approximately equal to the square root of the sum of the squares of the standard errors of each estimate considered separately. This formula will represent the actual standard error quite accurately for the difference between two estimates of the same characteristic in two different areas, or for the difference between separate and uncorrelated characteristics in the same area. If, however, there is a high positive correlation between the two characteristics, the formula will overestimate the true standard error.

Illustration of the computation of the standard error of a difference. Table 1 of this report shows that in October 1973 there were 1,405,000 3 to 5 year olds enrolled in private preprimary school. Thus the apparent difference between public and private enrollment is 1,424,000. The standard error of 2,829,000 is 62,000, as shown above. Table L shows the standard error on an estimate of 1,405,000 to be approximately 47,000. The standard error of the estimated difference of 1,424,000 is about

$$78,000 = \sqrt{(62,000)^2 + (47,000)^2}$$

This means the chances are 68 out of 100 that the estimated difference based on the sample would be less than 78,000 from the difference derived using complete census figures. The 68 percent confidence interval around the 1,424,000 difference is from 1,346,000 to 1,502,000, i.e., $1,424,000 \pm 78,000$. A conclusion that the average estimate of the difference derived from all possible samples lies within a range computed in this way would be correct for roughly 68 percent of all possible samples. The 95 percent confidence interval is 1,268,000 to 1,580,000 and thus we can conclude with 95 percent confidence that the number of 3 to 5 year olds enrolled in public preprimary schools is actually greater than the number of private preprimary school enrollees.

Table M. Standard Errors of Estimated Percentages

(68 chances out of 100)

Estimated percentage	Base of Percentage (Thousands)							
	250	500	750	1,000	1,500	2,500	5,000	7,500
2 or 98.....	1.2	0.8	0.7	0.6	0.5	0.4	0.3	0.2
5 or 95.....	1.8	1.3	1.0	0.9	0.7	0.6	0.4	0.3
10 or 90.....	2.5	1.8	1.4	1.3	1.0	0.8	0.6	0.5
20 or 80.....	3.3	2.4	1.9	1.7	1.4	1.1	0.7	0.6
35 or 65.....	4.0	2.8	2.3	2.0	1.6	1.3	0.9	0.7
50.....	4.2	2.9	2.4	2.1	1.7	1.3	0.9	0.7